

Claims

1. An antenna for a foldable radio device, which comprises a ground plane, the antenna having at least one resonant frequency and at least one operation band, outline of a radiating element of the antenna forming a planar figure which has a certain width and length, wherein a plane defined by said outline is substantially perpendicular to the ground plane of the radio device, said width is smaller than internal height of the radio device and the radiating element is coupled to the radio device only by its feed point.
2. The antenna according to claim 1, wherein, to provide operation bands, the fundamental resonating frequency of the antenna is arranged to fall into a frequency band of a first radio system and the nearest harmonic of the fundamental resonating frequency is arranged to fall into a frequency band of a second radio system.
3. The antenna according to claim 1, the radiating element comprising at least one conductive strip on a surface of a circuit board.
4. The antenna according to claim 3, said conductive strip making a meandering pattern such that the horizontal portions thereof are substantially equal to the whole radiating element in length.
5. The antenna according to claim 3, wherein there are two of said conductive strips and they are connected in series through an inductive component to tune the resonating frequencies of the antenna.
6. The antenna according to claim 4, a capacitive component being connected between said horizontal portions to tune the resonating frequencies of the antenna.
7. The antenna according to claim 4, wherein at least one slot between said horizontal portions is arranged to radiate in an operation band of the antenna.
8. The antenna according to claim 1, the radiating element being a rigid conductive wire.
9. The antenna according to claim 8, said conductive wire making a meandering pattern such that the vertical portions thereof are substantially equal to the width of the whole radiating element.

10. The antenna according to claim 1, wherein in the direction of the normal of the radiating element an edge of the ground plane is limited to a certain distance from the radiating element to improve a matching of the antenna.
- 5 11. A foldable radio device comprising a first and a second folding part, an antenna, and a ground plane, outline of a radiating element of the antenna forming a planar figure having a certain width and length, the antenna being located within the first folding part of the radio device, the plane defined by said outline being substantially perpendicular to the ground plane of the radio device and the radiating element being coupled to the radio device only by its feed point.
- 10 12. The radio device according to claim 11, said first folding part comprising the radio-frequency parts of the radio device.